

**Idaho Department of Environmental Quality**



**Documentation of PM<sub>2.5</sub> Exceedances Due to a Natural  
Wildland Fire Events During the Summer of 2007  
Salmon, Idaho**

**Prepared by the Idaho Falls Regional Office  
June 2008**

# **Documentation of PM<sub>2.5</sub> Exceedances Due to a Natural Wildland Fire Events During the Summer of 2007 Salmon, Idaho**

## **Purpose**

During the months of August and September 2007, the Idaho Department of Environmental Quality (IDEQ) air quality monitoring network recorded several exceedances of the PM<sub>2.5</sub> National Ambient Air Quality Standard (NAAQS) at its monitoring location in Lemhi County (Salmon, ID). The PM<sub>2.5</sub> exceedances and other elevated PM<sub>2.5</sub> concentrations were caused by natural wildland fire events that transported smoke and particulate throughout large areas of eastern Idaho. The exceedances were flagged under provisions of the U.S. Environmental Protection Agency (EPA) Natural Event Policy. Documentation of the numerous wildland fire events is included in this submittal to support this flagged data.

## **Background**

Salmon is located in the Lemhi Valley, near the point where the Lemhi and Salmon Rivers meet. The complexity of the surrounding terrain and its effects on the weather can have a significant impact on the dispersion and buildup of air pollutants. Wintertime inversions, for example, may become enhanced not only by the movement of a strong high pressure system over the region, but by the more localized effects of cold drainage flow into the valleys at night. As this cold air becomes trapped in the lower layers of the atmosphere, it can lead to reduced mixing and poor dispersion. This may, in turn, contribute toward a significant buildup in pollutants as more and more particulate matter is released into the stable air. This is especially true as the use of wood stoves and fireplaces increase. During the summer months, however, increased mixing combined with reduced source strength, typically help to keep air quality levels within the good range. The early portion of the summer of 2007 was no exception to this usual pattern of events. In the months leading up to the fires, PM<sub>2.5</sub> levels were low. Once the fires started to grow, however, particulate concentrations began to rise. As the fires became more widespread and increased amounts of smoke were released into the atmosphere, air quality conditions began to approach unhealthy levels. By early August excursions of the 24-hour PM<sub>2.5</sub> standard had been measured at the Salmon monitoring site.

According to the U.S. Forest Service, the 2007 fire season was second only to 2006 in terms of scale. The National Interagency Fire Center received reports of 9,321,326 acres of wildland fires, with 1,980,552 of those acres occurring within the State of Idaho. According to the National Climatic Data Center, long-term moisture deficits played a critical role in the severity of the 2007 wildfire season, especially in the Southwest and West which had persistent drought conditions during the year. The fire season started slowly in June across most of the West, increased dramatically through July, and became the most severe during the months of July and August. Fire activity persisted into September across parts of Idaho but eventually began to diminish. Smoke from the multitude of fires in Idaho and Montana impacted air quality as far as portions of the northern Great Plains and into southwest Canada, while also passing over the Salmon region (Figure 1).

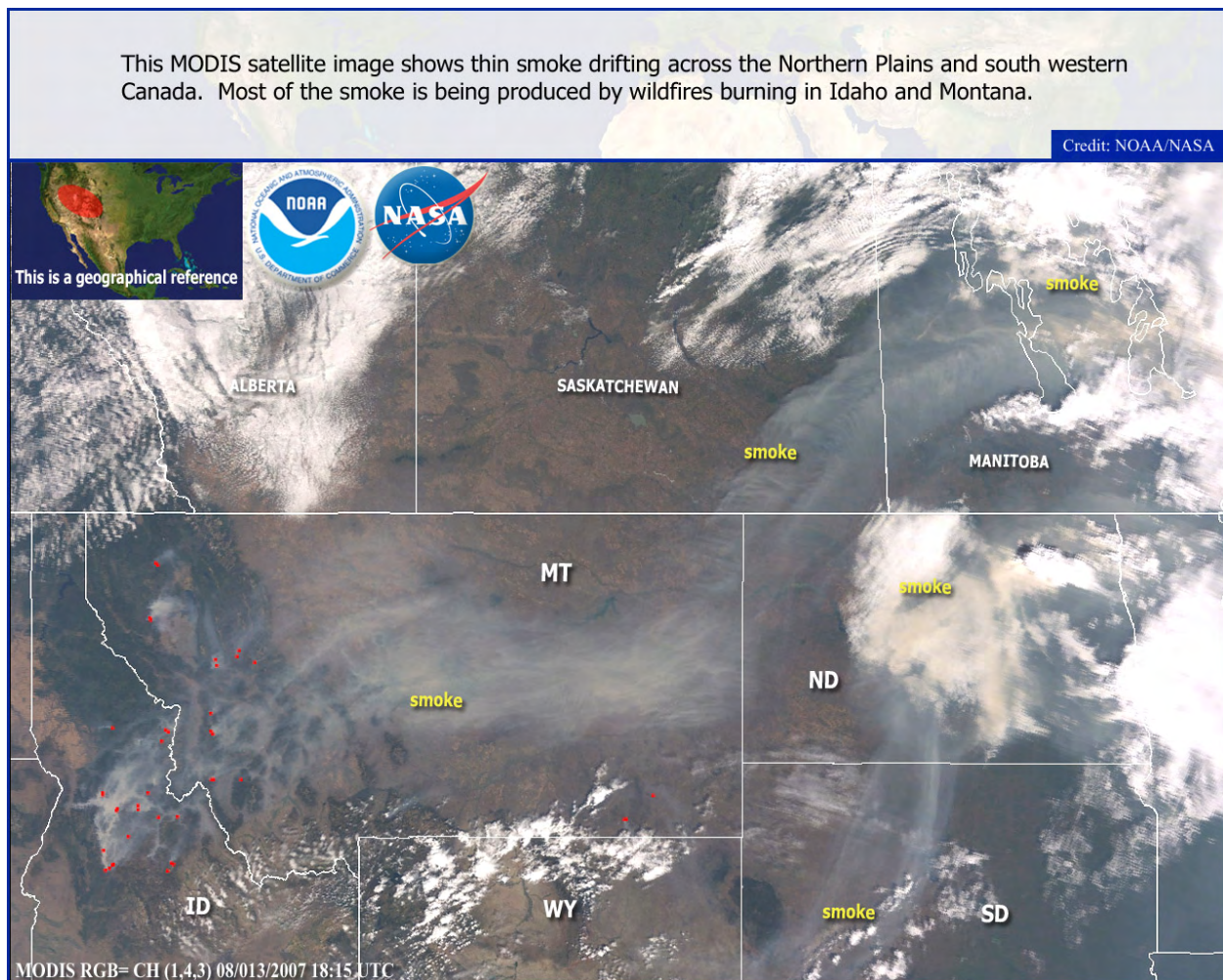


Figure 1. MODIS satellite image taken on August 13, 2007.

### Documentation of the Wildland Fire Events

In this report, DEQ provides documentation to support that the  $PM_{2.5}$  exceedances measured during the month of August and September were caused by natural wildland fire events throughout neighboring portions of the state. This report includes documentation for the following:

- 1) A summary of  $PM_{2.5}$  concentrations recorded in Salmon, Idaho during June, July, August, and September 2007.
- 2) Newspaper articles, satellite images, and other material that recorded the event.

### Monitoring Data

The Idaho Department of Environmental Quality (DEQ) maintains a monitoring site within the city of Salmon, Idaho. An evaluation of the R&P  $PM_{2.5}$  2025 FRM (AIRS Monitor ID 160590004881011) data shows numerous exceedances of the  $PM_{2.5}$  National Ambient Air Quality Standard (NAAQS) during the summer of 2007. Exceedances were recorded on August

4<sup>th</sup> (45.7  $\mu\text{g}/\text{m}^3$ ), August 7<sup>th</sup> (37.4  $\mu\text{g}/\text{m}^3$ ), August 13<sup>th</sup> (172.3  $\mu\text{g}/\text{m}^3$ ), August 19<sup>th</sup> (60.3  $\mu\text{g}/\text{m}^3$ ), August 25<sup>th</sup> (48.4  $\mu\text{g}/\text{m}^3$ ), and on September 12<sup>th</sup> (65.5  $\mu\text{g}/\text{m}^3$ ).

Prior to the peak 2007 fire season, which began in mid-July,  $\text{PM}_{2.5}$  concentrations were well below the NAAQS standard of 35  $\mu\text{g}/\text{m}^3$ . Concentrations in June 2007 did not exceed 6  $\mu\text{g}/\text{m}^3$  on valid sample dates. As fires began to spread throughout the state, smoke impacts could be seen as concentrations began to rise. Concentrations peaked in mid-August when “Very Unhealthy” conditions were reached. As the fire season came to an end in mid-September, levels could be seen returning to more normal levels similar to what had been seen in June prior to the peak fire season. (Figure 2).

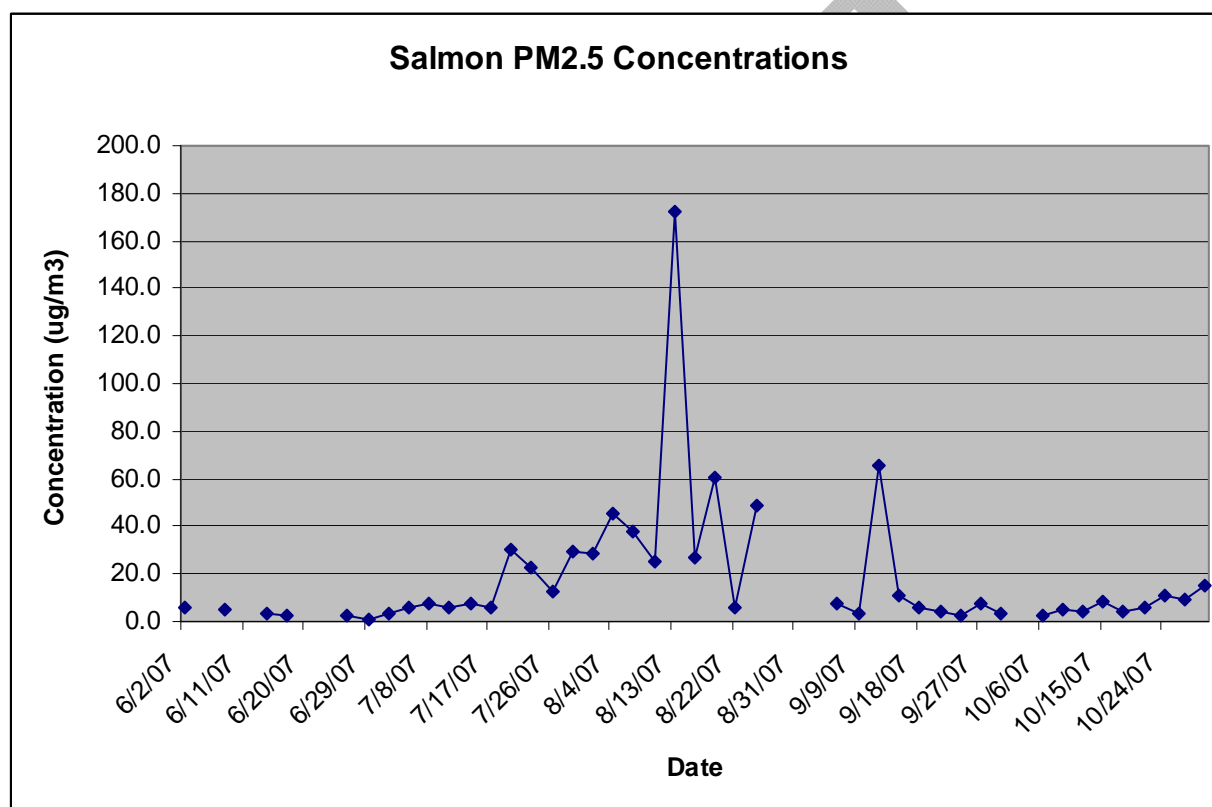


Figure 2. Average 24-hour  $\text{PM}_{2.5}$  concentrations during June, July, August, September, and October 2007.

## CONCLUSION

The 2007 fire season within the United States was second only to the fire season of 2006 in terms of scale. Large portions of Idaho's wilderness and other parts of the country were susceptible to naturally occurring wildfires due to ongoing drought conditions. Fires primarily located in central Idaho had large smoke impacts on the Salmon, Idaho area and its associated  $\text{PM}_{2.5}$  FRM monitor. These smoke impacts led to the exceedances of the NAAQS discussed earlier in the report. The following Appendices provide additional information, including newspaper articles, United States Forest Service News Releases, satellite imagery, and other fire maps that provide additional and clear documentation of the fires affecting air quality in the Salmon region.

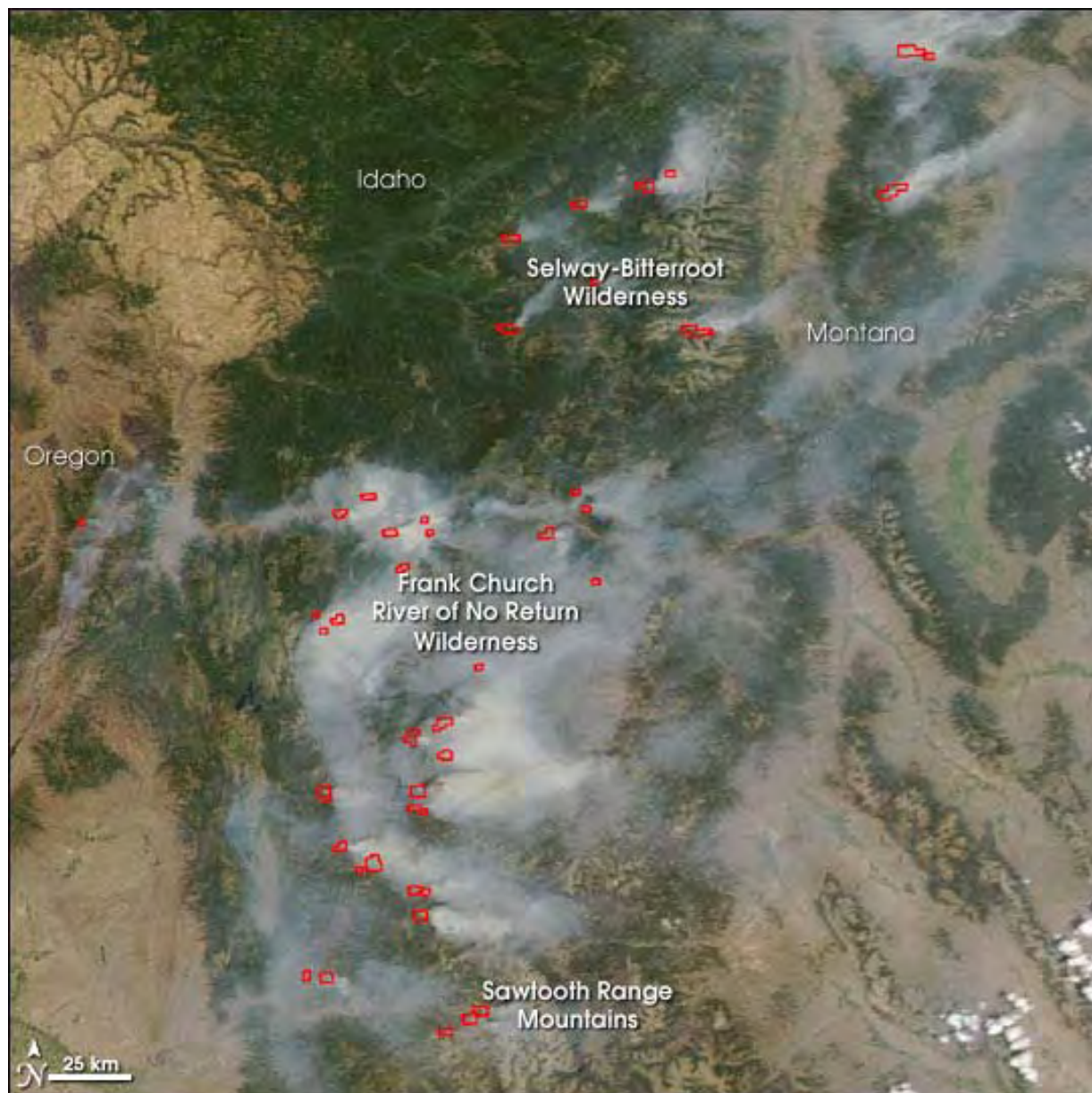
**Documentation of PM<sub>2.5</sub> Exceedances Due to a Natural  
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**Appendix A**

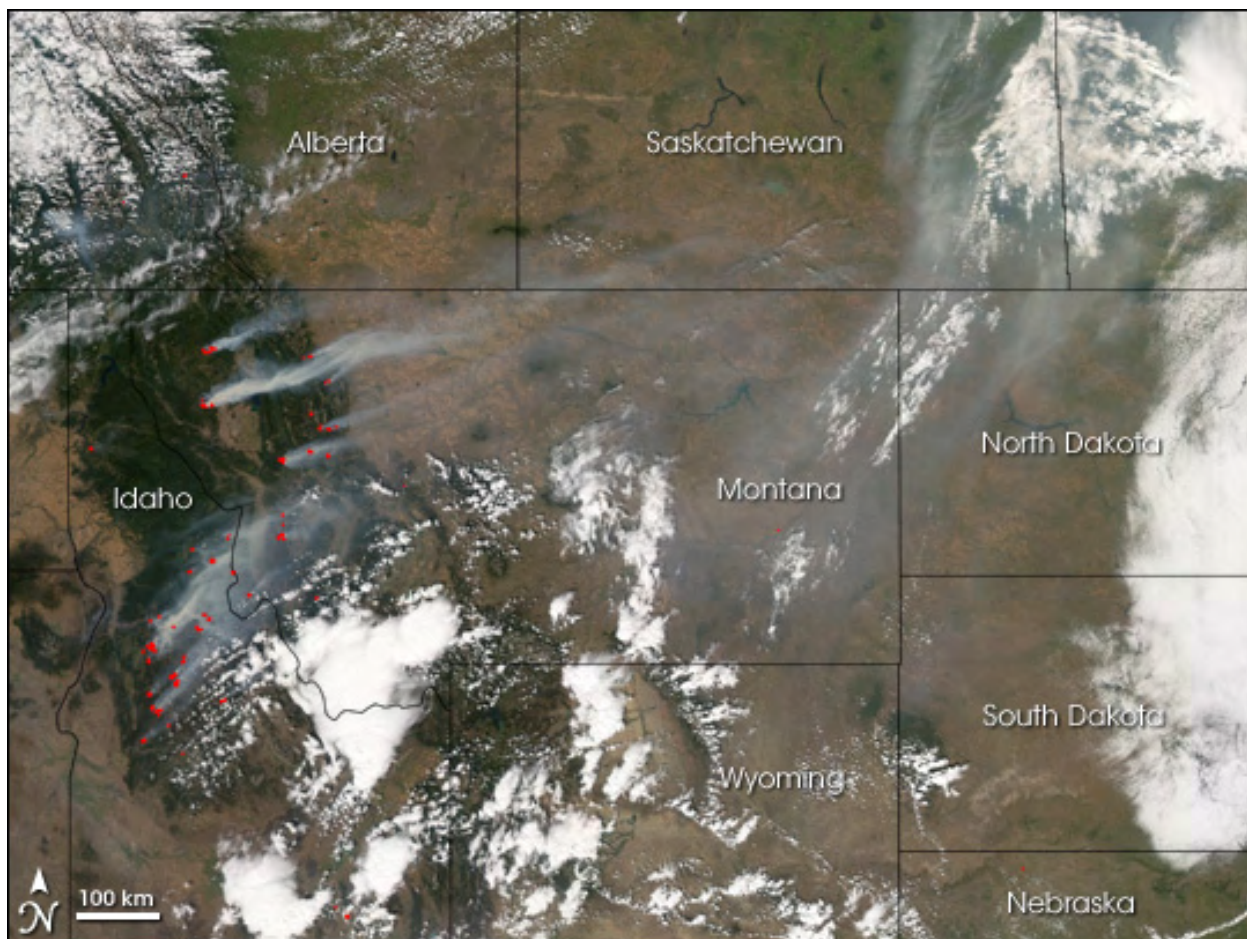
**Satellite Images and Wildfire Maps**

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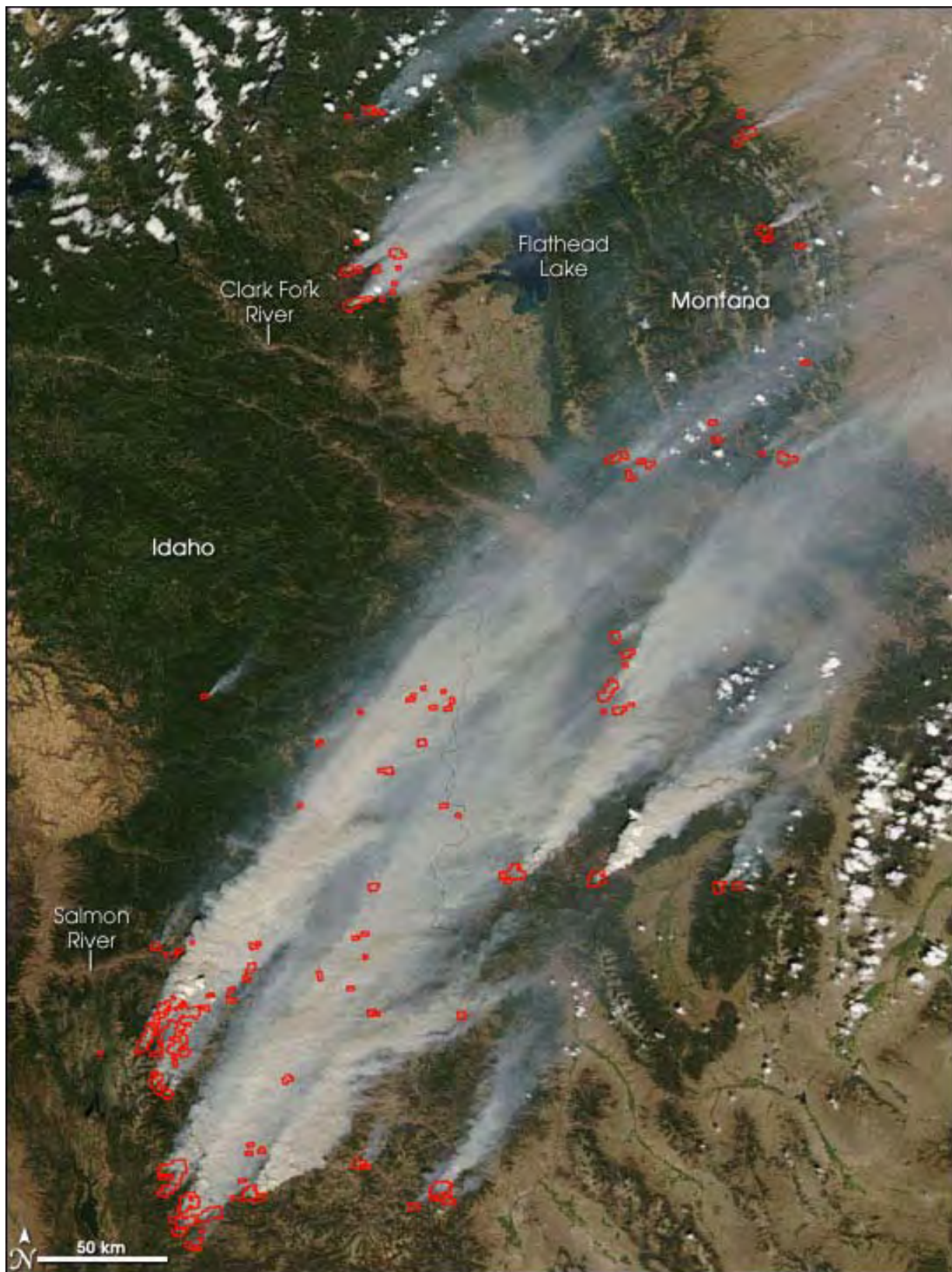


August 1, 2007 by the Moderate Resolution Imaging Spectroradiometer (MODIS) on NASA's Aqua satellite.



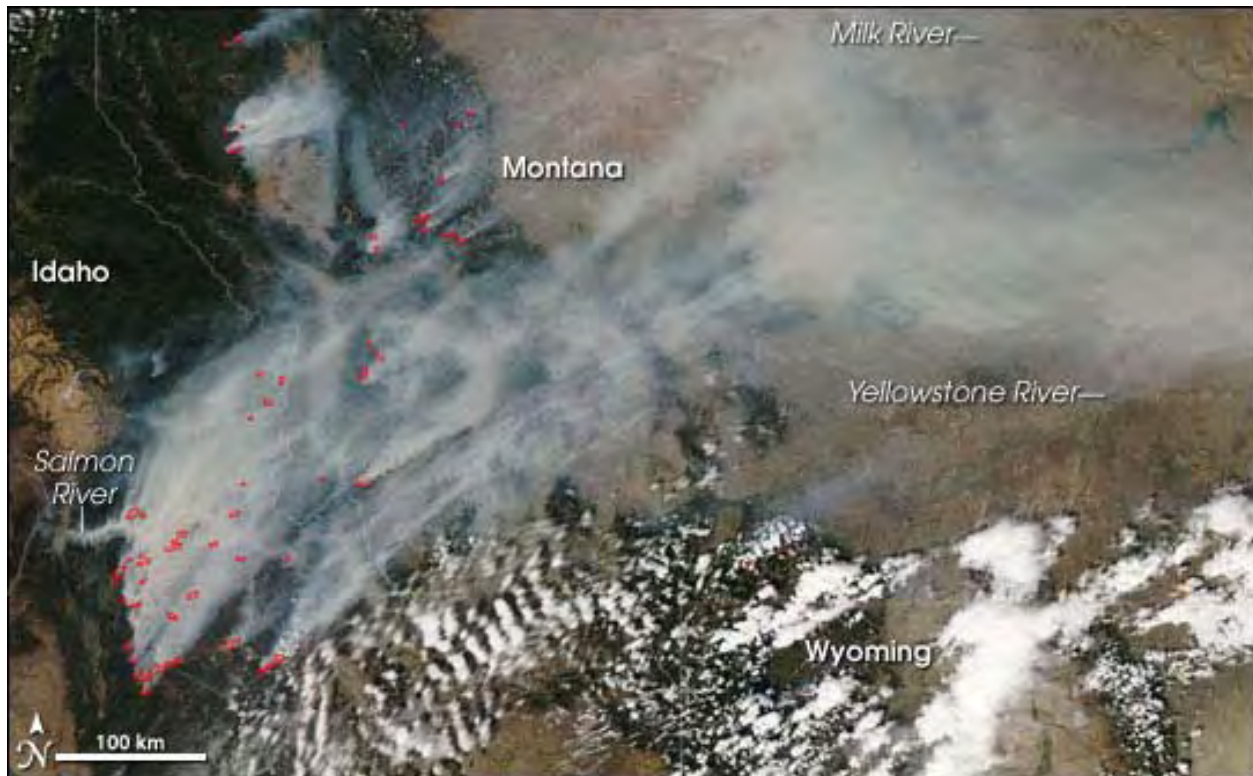
August 4, 2007 by the Moderate Resolution Imaging Spectroradiometer (MODIS) on NASA's Aqua satellite.



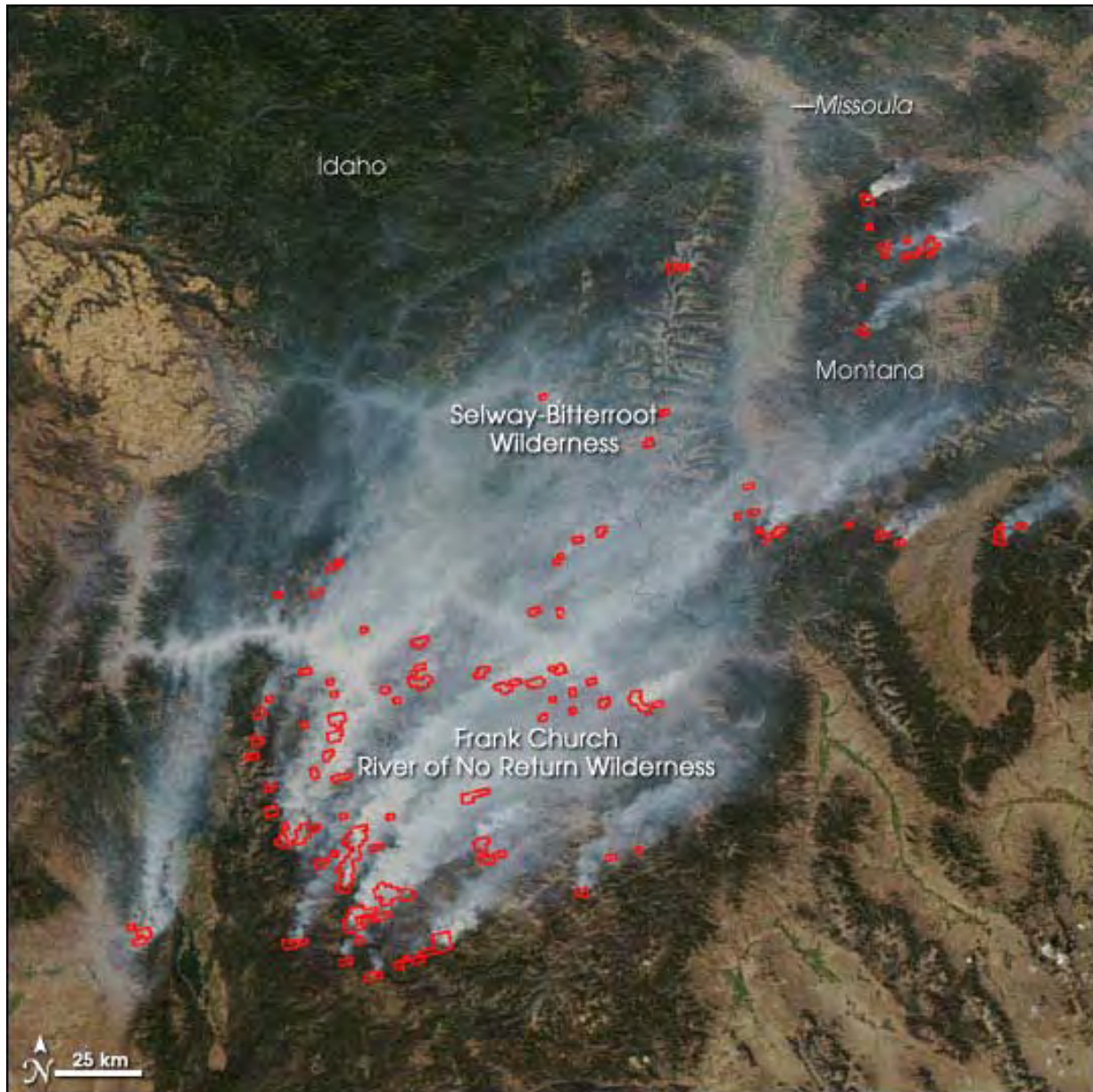


August 12, 2007 by the Moderate Resolution Imaging Spectroradiometer (MODIS) on NASA's Aqua satellite.



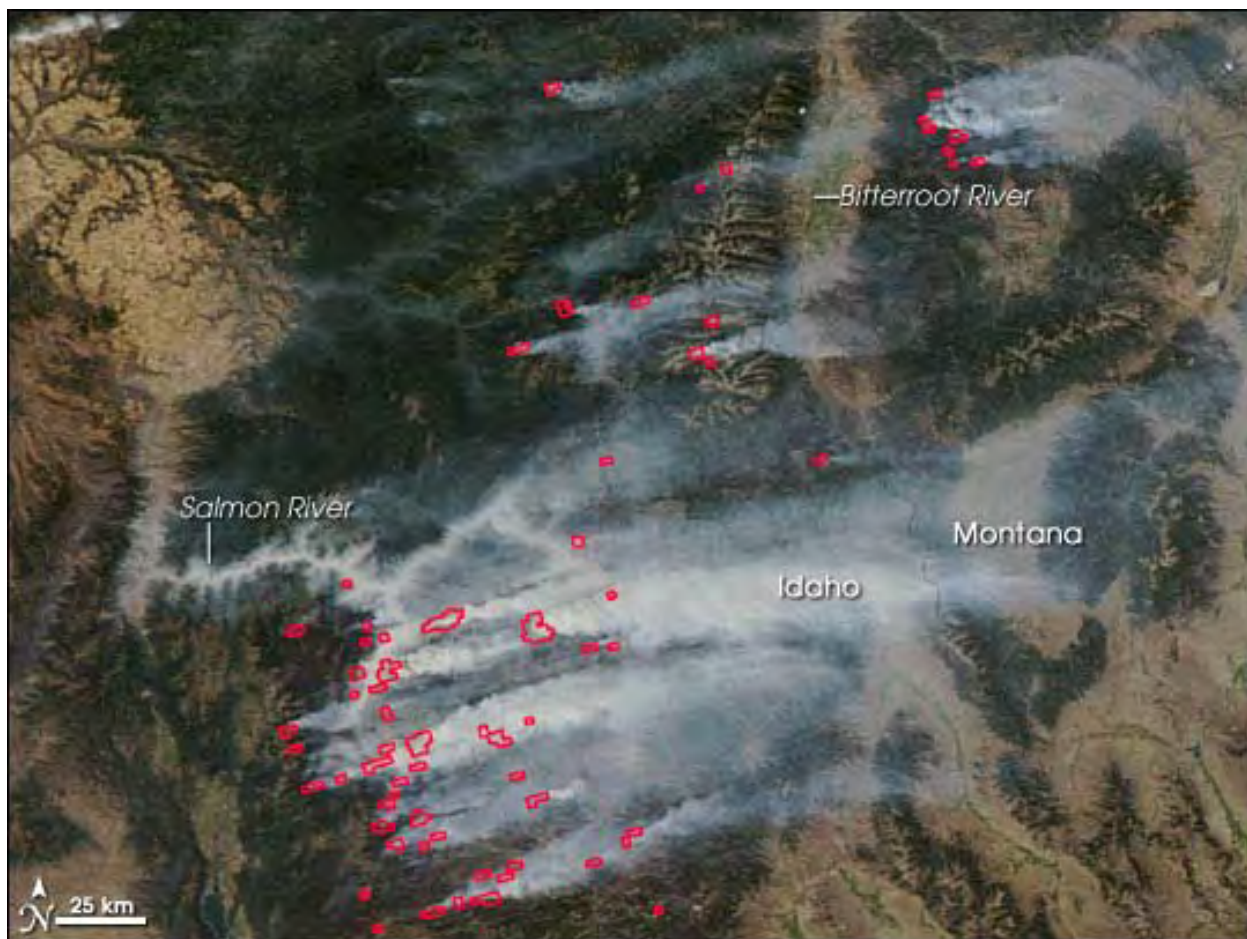


August 13, 2007 by the Moderate Resolution Imaging Spectroradiometer (MODIS) on NASA's Aqua satellite.



September 3, 2007 by the Moderate Resolution Imaging Spectroradiometer (MODIS) on NASA's Aqua satellite.





September 12, 2007 by the Moderate Resolution Imaging Spectroradiometer (MODIS) on NASA's Aqua satellite.

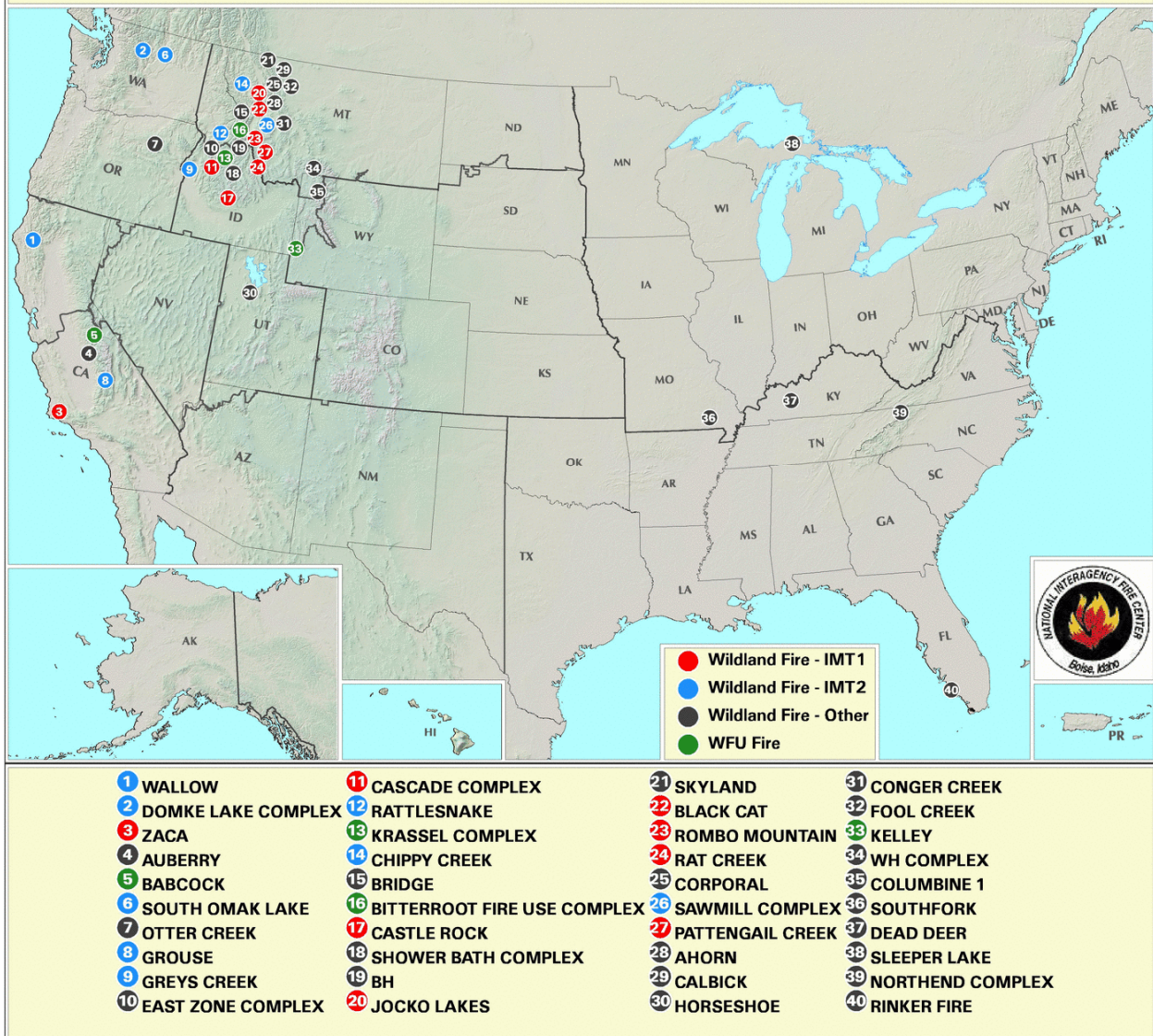


# Large Incidents - July 31, 2007



National Climatic Data Center - Climate of 2007 Wildfire Season Summary

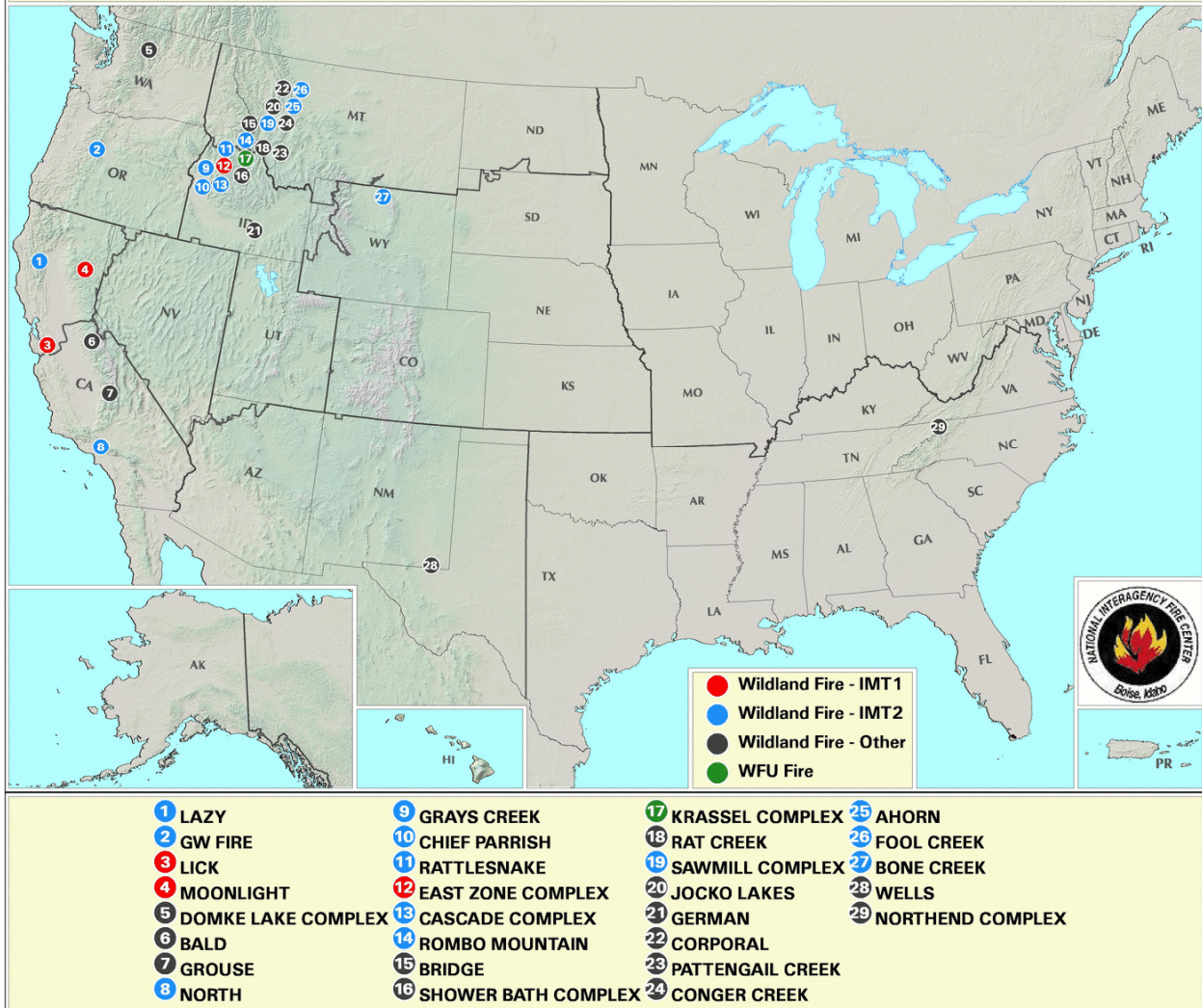
# Large Incidents - August 31, 2007



National Climatic Data Center - Climate of 2007 Wildfire Season Summary



# Large Incidents - September 09, 2007



National Climatic Data Center - Climate of 2007 Wildfire Season Summary



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Salmon, Idaho**

**Appendix B**

**News Articles**

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**August 16, 2007 – Post Register**

**Stuck in a Haze: Fires putting a damper on Salmon Economy**

Laura Zuckerman; [krolston@postregister.com](mailto:krolston@postregister.com)

Normally swamped with tourists this time of year, fire closures have snuffed out much of the region's business for the summer.

SALMON -- Main Street in August is generally bustling with tourists.

Not this year.

The out-of-towners have scattered as wildfires have forced the cancellation of rafting trips on both the Main Salmon River and the Middle Fork Salmon River.

"It seems pretty dead around here, but there isn't much we can do about it," said Rrie Mills, administrator of the Salmon Valley Chamber of Commerce.

The U.S. Forest Service has the final say about when rafting trips will resume. The Middle Fork has been off-limits since Tuesday because of a wildfire centered 30 miles west of Challis. Its closure came on the heels of the Aug. 7 shutdown on the Main Salmon River. Hazards on both rivers range from fire-weakened trees to smoke.

Meanwhile, merchants in downtown Salmon are enduring a slowdown during what's traditionally been their most hectic time.

"Summer is when we count on that extra money for the year," said Ken Beller, co-owner of McPherson's department store on Main Street.

Particularly hard hit have been the outfitting businesses, most of which are small and family-owned. August is when the industry hopes to realize a net profit, said Grant Simonds, head of the Idaho Outfitters and Guides Association.

"We're certainly at the mercy of the whims of Mother Nature," he said about the industry, which serves as one of the Salmon area's economic engines. "We're not unlike the agricultural sector in Idaho when it comes to that, and outfitters understand that."

Though the outfitters might be bearing the brunt of the river closures, the impact is being felt by area merchants, too.

Nick Bertram, owner of Bertram's Brewery and Restaurant, has noticed a slowdown during a time when he usually sees business double.

Although Bertram and his peers expect the economic hit to be challenging, they hope it will not strike as hard as summer 2000, the last time fires ended the boating season early and choked the air with smoke for months.

Loren Arfmann, owner of Arfmann's Four Seasons, said the department store builds around its local market but is "tickled with anything that adds to it."

"We have to adjust every year," he said. "Every year, something is different and there is always something you have to work around."

Conversely, select businesses -- such as the food service industry and suppliers of fire camp equipment -- can expect to increase profits during the wildfire season.

Others, such as the outfitters, are doing all they can to accommodate customers. Some have rescheduled trips to stretches of the rivers that remain open or are booking clients with other outfitters on alternate rivers.

In a business predicated on word-of-mouth, customers' desires come first, said Bob Volpert, president of Idaho River Journeys near Salmon.

"We're hanging in there," Volpert said.

**August 17, 2007 – Post Register**

**Health Hazards: Smoke causing problems in Lemhi, Custer**

Laura Zuckerman; [krolston@postregister.com](mailto:krolston@postregister.com)

Residents should limit indoor and outdoor exertion and abide by a ban on open burning.

SALMON -- Wildfire-driven smoke is pouring into the Salmon River Valley, causing a spike in pollutants that has prompted health warnings.

The air in Lemhi and Custer counties is considered unhealthy, according to an air quality advisory issued by the Idaho Department of Environmental Quality.

That means all residents should limit indoor and outdoor exertion, and abide by a ban on any open burning.

A rainstorm in the area Thursday afternoon cleared the skies in Salmon for the first time in days and prompted hope that smoky conditions are nearing their end. But with wildfires burning vast swaths of Idaho, the state Department of Health and Welfare issued a release warning residents of the dangers of smoke and urging people to moderate outdoor activities.

Smoke from wildland fires in the Salmon-Challis National Forest and other forests in Idaho began sweeping into the area late Sunday afternoon. While none of those fires is threatening to overtake Salmon or Challis, the smoke has cloaked scenic mountain ranges and reduced visibility on local roadways.

But that's the least of it, residents say.

There's the choking and dry eyes, and ash is everywhere.

"It's a little depressing," said Juanita Grkovic, a retired Salmon merchant.

Grkovic's health was permanently affected by the smoke that lingered in the valley for months during the wildfire season of 2000. Today, she takes medication to combat a chronic lung condition that sometimes restricts her to indoor activities.



"I don't think people realize how damaging this can be," she said.

Salmon Mayor Stan Davis emphasized that Salmon is still open for business.

"I don't want to discourage people from visiting our beautiful city," he said.

At the same time, Davis said, the time is near when neighbors should check on the welfare of the ailing and elderly. He added that those experiencing the physical effects of the smoke should seek so-called clean rooms -- such as the library -- if they don't have access to air-conditioning or an air-filtering system.

Rensay Owen, regional air quality manager with DEQ, said the phones at the Idaho Falls office are ringing off the hook with calls from Salmon-area residents worried about the smoke and many comparing the current impact with the 2000 fire season.

"It's very dense; the smoke is down to the ground," said Cathy Lee, who lives off U.S. Highway 93 South between Salmon and Challis. "We're staying inside as much as possible and putting damp cloths in front of the fan to cool things down."

#### **August 22, 2007 – Idaho Statesman.com**

##### **Major wildfires burning in Idaho**

At least 16 fires and fire complexes are burning on more than 787,342 acres in Idaho, the National Interagency Fire Center said.

##### **North-Central Idaho**

Poe Cabin: 58,520 acres, 23 miles southwest of Grangeville; 95 percent contained. Rattlesnake: 88,933 acres, 25 miles south of Elk City; an unknown percent contained. Concord and other nearby structures were threatened.

Bridge: 36,150 acres, 45 miles southwest of Missoula; 0 percent contained.

Boundary Junction: 5,000 acres, 15 miles southeast of Pierce; 0 percent contained.

Slick: 410 acres, 17 miles northeast of Pierce; this fire will be allowed to burn under the wildland fire-use policy.

##### **Central Idaho**

Red Bluff: 37,942 acres, 31 miles northwest of Challis; structures were threatened; unknown percent contained.

Clear Sage: 8,150 acres, 25 miles northwest of Salmon; unknown percent contained. Cascade

Complex: 158,638 acres, 16 miles northeast of Cascade; 11 percent contained. Active fire behavior was reported. The Warm Lake community, Paradise Valley and the main power line for Warm Lake were threatened. Evacuations in effect.

East Zone Complex: 202,953 acres, 25 miles northeast of McCall; 10 percent contained. The Secesh, Warren, and South Fork communities remain threatened. Secesh and Warren remain evacuated.

Landmark Complex: 47,270 acres west of Yellow Pine; 15 percent contained. Structures were threatened.

Krassel Complex: 47,319 acres, 44 miles northeast of Yellow Pine; this fire will be allowed to burn.

Shower Bath: 58,000 acres, 18 miles northwest of Challis; 0 percent contained. Structures remain threatened.

Castle Rock: 12,058 acres, 10 miles west of Ketchum; 6 percent contained. Extreme fire behavior was reported; structures were threatened, evacuations are in effect.

#### Southeast Idaho

Cleveland: 16,269 acres, 12 miles northeast of Preston; unknown percent contained.

Mitchell: 9,730 acres, 10 miles north of Holbrook; 87 percent contained. Several structures remain threatened.

#### **September 03, 2007 – Idaho Statesman.com**

#### **Fires have burned nearly 2 million acres across Idaho**

At least 20 fires and fire complexes are burning 1.9 million acres across Idaho, according to the National Interagency Fire Center. The number of acres burned in some fires may go down as firefighters get a more accurate count. Here are some of the statistics as of Sunday night.

#### North-central Idaho

- Rattlesnake: 97,500 acres, 25 miles south of Elk City; 25 percent contained. Residences were threatened.
- 0-7: 288 acres, 9 miles east of Kooskia; 90 percent contained. This fire is 9 miles east of Kooskia. Residences were threatened.
- Bridge: 46,750 acres, 45 miles southwest of Missoula, Mont.; 0 percent contained.

#### Central Idaho

- Krassel Complex: 57,027 acres, 44 miles northeast of Yellow Pine. This fire will be allowed to burn.
- Confluence Complex: 31,614 acres, 28 miles southwest of North Fork; Unknown percent contained.
- Cascade Complex: 249,599 acres, 16 miles northeast of Cascade; 30 percent contained. Communities, cultural sites and historical cabins remained threatened.
- East Zone Complex: 219,061 acres, 25 miles northeast of McCall; 10 percent contained. The Secesh, Warren and South Fork communities remained threatened.
- Grays Creek: 17,768 acres, 13 miles south of Council; 30 percent contained. Structures were threatened; evacuations and road closures were in effect.
- Sandy: 10,600 acres, 8 miles northeast of Payette; 100 percent contained.
- Shower Bath Complex: 59,809 acres, 18 miles northwest of Challis; 0 percent contained. Structures, historic cabins, and cultural sites remained threatened.

- Castle Rock: 47,859 acres, three miles west of Ketchum; 81 percent contained. Evacuations remained in effect.

**September 4, 2007 – KPVI.com**

### **Salmon- Challis Nation Forest Battling a Number of Fires**

Fires near Salmon have destroyed several historic structures in the area.

The Shoup Fire is the newest fire to the Salmon-Challis National Forest.

It started yesterday- the cause is unknown.

The historic Gold Hill Mine building and several other structures near Shoup were destroyed by fire.

Firefighters continue to battle the blaze on the steep hillside above the mine today.

The residence at the mine- located adjacent to Salmon River road, 20 miles west of North Fork- was saved.

This morning the Indianola and Salmon crews, a type 2 crew, and two engines are still working on the fire.

The fire has burned 5 acres around the mine.

Resources from the nearby Confluence Complex Fire were also used earlier this morning for the Shoup Fire- but had to return.

The Confluence Complex consists of the Papoose and Clear Sage fires on the north end of the forest near the confluence of the Middle Fork River and the Main Salmon River.

This lightning caused fire has burned over 32 thousand acres so far.

The Papoose fire showed little growth yesterday while the Clear Sage fire continued to expand to the west across Lake Creek.

It was active throughout the night, crews worked on structure protection late into the evening.

There are some potential threats to cabins, residences, lodges, and recreation facilities in the area.

The National Forest is also battling the Shower Bath Complex of fires.

The Shower Bath Complex consists of the Shower Bath and Red Bluff fires on the south end of the forest.

These fires were also lightning caused.

Combined- this complex of fires has burned more than one hundred and 18 thousand acres.

The Shower Bath fire has burned slightly out of the wilderness in the West Fork of Morgan Creek vicinity.

The Shower Bath Complex expects winds averaging 10 to 15 miles per hour- and humidity that may reach 15% today.

This will produce red flag conditions over much of the Shower Bath Complex today.

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**Appendix C**

**Central Idaho Dispatch: Salmon – Challis National Forest  
News Releases**

## **FIRE UPDATE**

July 16, 2007

Contact: Kent Fuellenbach (208)756-5145, e-mail kfuellenbach@fs.fed.us

### **New Fires**

Quick action by helicopter rappellers and other firer fighters controlled 10 of the 15 fires started by lightning over the weekend. A lightning storm Friday, July 13 started the fires on the North Fork District and the Salmon-Cobalt District if the Salmon-Challis National Forest. Initial attack efforts kept each of the 10 fires to 1 acre or less. A six person crew has also controlled the Smith Fire at one acre in the head of the Pine Creek drainage 13 miles west of North Fork. The remaining four fires have burned a total of 300 acres south east of the Sagebrush Lookout in the Clear Creek drainage. These fires are in the area burned by the Clear Creek Fire in 2000. "These four fires are burning within the Clear Creek Fire perimeter in very steep rugged terrain in the Frank-Church River of No Return Wilderness. Because of our concern for fire-fighter safety we will manage the fires using a confine/contain strategy, similar to that being used on the Bohanan Fire," said North Fork District Ranger Russ Bacon.

### **Basin Fire**

Forty firefighters and one engine continue working on the 200 acre Basin Fire to complete suppression activities. The 200 acre fire, seven miles northeast of Stanley, started by human activity July contained July 11 at 10 p.m. Crews are extinguishing remaining hot spots. Highway 75 is open. However, motorists should be alert for fire related traffic in the area.

### **Bohannon**

The Bohannon Fire, ten miles east of Salmon is burning in extremely rugged, rocky terrain, and is being managed using a confine/contain strategy. "Our primary concern is the safety of firefighters and the public," said BLM Field Manager Steve Hartmann. "We will be taking those actions needed to protect life and property, but, the low commodity values of the area do not justify a large expenditure of money to suppress this fire."

A team of fire specialists arrived in Salmon today to analyze the fire and assist local BLM managers in developing a confinement strategy.

### **Fire Restrictions**

Because of increase fire activity and continuing hot dry weather Stage 1 Fire Restrictions will go into effect Thursday, July 19, on the Salmon-Challis National Forest.

## **FIRE UPDATE**

July 16, 2007 p.m.

Contact: Kent Fuellenbach (208)756-5145, e-mail kfuellenbach@fs.fed.us

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Four new fires were started by lightning on the south zone of the Forest. Fire is burning at Van Horn Creek in the Morgan Creek drainage 16 miles north east of Challis. One 20 person fire crew and an incident commander are working on the 5.5 acre fire. The

Tappen Fire, in the Tappen Creek drainage, has burned five acres in the Frank-Church River of No Return Wilderness. It will be managed using a Wildland Fire Use strategy which will allow fire to play its natural role in the wilderness. The fire will be analyzed and carefully monitored. Two other small fires in the wilderness were suppressed and controlled, one near Greyhound Creek and another near Camas Creek.

#### **Basin Fire**

Forty firefighters and one engine continue working on the 200 acre Basin Fire to complete suppression activities. The 200 acre fire, seven miles northeast of Stanley, started by human activity July contained July 11 at 10 p.m. Crews are extinguishing remaining hot spots. Highway 75 is open. However, motorists should be alert for fire related traffic in the area.

#### **Bohannon**

The Bohannon Fire, ten miles east of Salmon is burning in extremely rugged, rocky terrain, and is being managed using a confine/contain strategy. "Our primary concern is the safety of firefighters and the public," said BLM Field Manager Steve Hartmann. "We will be taking those actions needed to protect life and property, but, the low commodity values of the area do not justify a large expenditure of money to suppress this fire." A team of fire specialists arrived in Salmon today to analyze the fire and assist local BLM managers in developing a confinement strategy.

#### **Fire Restrictions**

Because of increase fire activity and continuing hot dry weather Stage 1 Fire Restrictions will go into effect Thursday, July 19, on the Salmon-Challis National Forest.

### **FIRE UPDATE**

July 17, 2007

Contact: Kent Fuellenbach (208)756-5145, e-mail [kfuellenbach@fs.fed.us](mailto:kfuellenbach@fs.fed.us)

#### **New Fires**

Lightning started two fires on the Salmon-Challis National Forest today.

The Pine Fire is burning 2 miles south east of the Stormy Peak lookout, near Arastra Gulch in the Pine Creek drainage on the North Fork Ranger District. Six rappellers and 10 firefighters from the Kootenai Crew are working on the fire which is burning in grass and timber.

The Half Moon Fire was spotted one mile south west of Sulphur Creek Ranch in the Frank Church-River of No Return Wilderness. Two rappellers are working on the fire which is currently less than an acre.

#### **Van Horn Fire**

The fire grew from 75 acres to 150 acres Monday evening. It is burning near the head of Van Horn Creek in the Morgan Creek drainage 16 miles north east of Challis. Seventy firefighters are working on the fire.

#### **Clear Sage Fire**

The Clear Sage Fire includes four lightning caused fires that have burned a total of 461 acres south east of the Sagebrush Lookout in the Clear Creek drainage in the Frank Church – River of No Return Wilderness. These fires are in the area burned by the Clear Creek Fire in 2000 and are being managed using confine and contain strategy because of the steep rugged terrain and because the area was heavily burned during the 2000 fire.

#### **Basin Fire**

The 200 acre fire, seven miles northeast of Stanley, was declared controlled July 16.

#### **Tappen Fire**

The fire has burned five acres in the Frank Church-River of No Return Wilderness. It will be managed using a Wildland Fire Use strategy which will allow fire to play its natural role in the wilderness. The fire will be analyzed and carefully monitored.

### **Bohannon**

The 42 acre Bohannon Fire is smoldering and creeping in a steep narrow drainage north of Bohannon Creek 10 miles southeast of Salmon. Due to steep slopes, falling rocks and snags and numerous abandoned mines, fire managers are utilizing natural and human made barriers to contain the fire rather than putting firefighters at risk in the extremely hazardous terrain. The fire will be held north of Bohannon Creek, south of Geertson creek, west of the Continental Divide, and east of private property boundaries.

### **Fire Restrictions**

Because of increased fire activity and continuing hot dry weather Stage 1 Fire Restrictions will go into effect Thursday, July 19, on the Salmon-Challis and the Caribou – Targhee National Forests, and Friday, July 20 in three central Idaho Wilderness Areas; the Frank Church – River of No Return, Selway – Bitterroot and Gospel – Hump.

### **FIRE UPDATE**

July 19, 2007

Contact: Kent Fuellenbach (208)756-5145, e-mail [kfuellenbach@fs.fed.us](mailto:kfuellenbach@fs.fed.us)

The fire activity was fairly calm on the Salmon-Challis National Forest yesterday with no large increases in the acreage of the existing fires.

### **Fire Restrictions**

Stage 1 Fire Restrictions went into effect today for the Salmon-Challis and the Caribou – Targhee National Forests, and in three central Idaho Wilderness Areas; the Frank Church – River of No Return, Selway – Bitterroot and Gospel – Hump.

### **Van Horn**

The Van Horn Fire did not increase in size yesterday. The fire is burning near the head of Van Horn Creek in the Morgan Creek drainage 16 miles northeast of Challis. Seventy firefighters are working on the fire. A **fire closure** is now in place in the Van Horn Fire area which includes the area west of Morgan Creek between Lick Creek and Alder Creek, including the Van Horn Trail and DeWitt Creek drainages and the area southeast of Furnace Creek and the Custer/Lemhi County Line.

### **Clear Sage**

The Clear Sage fires remained at 461 acres again Wednesday. The fire is southeast of the Sagebrush Lookout in the Clear Creek drainage in the Frank Church – River of No Return Wilderness. These fires are in the area burned by the Clear Creek Fire in 2000 and are being managed using confine and contain strategy because of the steep rugged terrain and because the area was heavily burned during the 2000 fire. A **fire closure** is in place in the area of the Clear Sage Fire, including the Clear Creek drainage between Gant Ridge and the Sage Brush Look Out and from the mouth of Deadhorse Creek to near the mouth of Clear Creek on the Panther Creek Road. The area is within the boundaries of the Frank Church-River of No Return Wilderness. For a detailed description of the closure boundaries and a listing of the closed roads and trails see [www.fs.fed.us/r4/sc/fire](http://www.fs.fed.us/r4/sc/fire) Current Emergency Fire Closures.

### **Pine**

The Pine Fire did not increase in size yesterday. It has burned to 11.6 acres in the Pine Creek Drainage, two miles southeast of the Stormy Peak Lookout. Six rappellers and 10 firefighters from the Kootenai Crew are working on the fire which is burning in grass and timber.

### **Full Moon**

Two fire fighters demobilized from the Full Moon Fire one mile southwest of Sulphur Creek Ranch in the Frank Church-River of No Return Wilderness.

### **Bohannon**

The 42 acre Bohannon Fire continues to smolder in a steep narrow drainage north of Bohannon Creek 10 miles southeast of Salmon. Due to steep slopes, falling rocks and snags and numerous



abandoned mines, fire managers are utilizing natural and human made barriers to contain the fire rather than putting firefighters at risk in the extremely hazardous terrain.

#### **New Fires**

Two new fires were reported on the Salmon-Challis National Forest yesterday. Two engines and seven people responded to spot fire near the Carmen Road. The fire was quickly controlled. The Oreana Fire is burning on the ridge two miles southwest of Oreana Lookout. Two rappellers are working on the fire today.

#### **Small Fires**

On the Challis-Yankee Fork District two rappellers controlled the Furnace Fire today, four miles southeast of Meyers Cove and about three miles west of the Van Horn Fire. The Furnace fire was reported July 17.

On the North Fork District two rappellers controlled the Bald Fire, one mile southwest of Bald Mountain and six miles northwest of Indianola. Two rappellers continue to work on the Porcupine Fire a mile northwest of Bald Mountain. Both fires were reported on July 17.

#### **FIRE UPDATE**

July 20, 2007

Contact: Kent Fuellenbach (208)756-5145, e-mail [kfuellenbach@fs.fed.us](mailto:kfuellenbach@fs.fed.us)

No new fires were reported yesterday and fire activity was light on the remaining fires in the central Idaho area.

#### **Fire Restrictions**

Stage 1 Fire Restrictions continue in effect today for the Salmon-Challis and the Caribou – Targhee National Forests, and in three central Idaho Wilderness Areas; the Frank Church – River of No Return, Selway – Bitterroot and Gospel – Hump.

#### **Van Horn**

The Van Horn Fire did not increase in size yesterday. The fire is burning near the head of Van Horn Creek in the Morgan Creek drainage 16 miles northeast of Challis. Seventy firefighters are working on the fire. The fire is 15% contained. The fire area closure remains in effect.

#### **Clear Sage**

The Clear Sage fires remained at 461 acres again Wednesday. The fire is southeast of the Sagebrush Lookout in the Clear Creek drainage in the Frank Church – River of No Return Wilderness. The fire area closure remains in effect.

#### **Pine**

The Pine Fire has been controlled. It burned 11.6 acres in the Pine Creek Drainage, two miles southeast of the Stormy Peak Lookout.

#### **Bohannon**

The 42 acre Bohannon Fire continues to smolder in a steep narrow drainage north of Bohannon Creek 10 miles southeast of Salmon.

#### **FIRE UPDATE**

July 21, 2007

Contact: Kent Fuellenbach (208)756-5145, e-mail [kfuellenbach@fs.fed.us](mailto:kfuellenbach@fs.fed.us)

#### **Van Horn**

Seventy firefighters were ordered to their safety zones as a push of extreme fire behavior swept through the Van Horn Fire at 11:45 today. Spot fires were sighted in the Van Horn Creek drainage. Burning was most severe on the northeast part of the fire. The fire created a great deal of smoke but the fire only grew approximately 50 – 75 acres in size. A medium helicopter is making bucket drops on the fire. The fire is burning near the head of Van Horn Creek in the Morgan Creek drainage 16 miles northeast of Challis. The fire area closure remains in effect.

#### **Clear Sage**

The Clear Sage fires remained at 461 acres again Wednesday. The fire is southeast of the Sagebrush Lookout in the Clear Creek drainage in the Frank Church – River of No Return Wilderness. The fire area closure remains in effect.

**Bohannon**

The 42 acre Bohannon Fire continues to smolder in a steep narrow drainage north of Bohannon Creek 10 miles southeast of Salmon.

**New Fires**

Two new fires were reported yesterday. Today two rappellers controlled the Yellow Jacket Fire near Remenclau Saddle, eight miles northwest of Moyer. Six firefighters worked on the Beaver Fire on the Yankee Fork District. Four were demobilized after the fire was contained today; two others remain at the fire to ensure control.

**FIRE UPDATE**

July 23, 2007

Contact: Kent Fuellenbach (208)756-5145, e-mail [kfuellenbach@fs.fed.us](mailto:kfuellenbach@fs.fed.us)

**Van Horn**

Seventy firefighters were back on the line Sunday after moving to their safety zones Saturday because of erratic fire behavior on the Van Horn Fire Saturday. The fire grew to 1500 acres over the weekend. The fire is burning near the head of Van Horn Creek in the Morgan Creek drainage 16 miles northeast of Challis. The fire area closure remains in effect.

**Clear Sage**

The Clear Sage fires remained at 461 acres again Wednesday. The fire is southeast of the Sagebrush Lookout in the Clear Creek drainage in the Frank Church – River of No Return Wilderness. The fire area closure remains in effect.

**Bohannon**

The 42 acre Bohannon Fire continues to smolder in a steep narrow drainage north of Bohannon Creek 10 miles southeast of Salmon.

**New Fires**

Initial attack efforts controlled two small fires yesterday, the Beaver Fire on the Yankee Fork District and the Stein Fire on the North Fork District.

**FIRE UPDATE**

July 24, 2007

Contact: Kent Fuellenbach (208)756-5145, e-mail [kfuellenbach@fs.fed.us](mailto:kfuellenbach@fs.fed.us)

No new fire starts were reported to Central Idaho Dispatch Monday.

**Van Horn**

A type one helicopter, doing bucket drops, and a dozer were added to the forces on the Van Horn fire today. A total of 97 people are engaged in fighting the fire which remained at 1500 acres 16 miles northeast of Challis. Officials are concerned about the fire spotting in heavy continuous fuels with beetle-killed trees. The fire area closure remains in effect.

**Clear Sage**

The Clear Sage fires remained at 461 acres again Wednesday. The fire is southeast of the Sagebrush Lookout in the Clear Creek drainage in the Frank Church – River of No Return Wilderness. The fire area closure remains in effect.

**Bohannon**

The 42 acre Bohannon Fire continues to smolder in a steep narrow drainage north of Bohannon Creek 10 miles southeast of Salmon.

**FIRE UPDATE**

July 25, 2007

Contact: Kent Fuellenbach (208)756-5145, e-mail [kfuellenbach@fs.fed.us](mailto:kfuellenbach@fs.fed.us)

With all the lightning yesterday the area also received measurable amounts of precipitation. Most weather stations reported around a quarter inch of rain. As of this morning no new fires had been located. Temperatures are expected to remain cooler throughout the day with another round of rain and lightning possible in the late afternoon.

#### **Van Horn**

Only a trace amount of rain fell on the Van Horn fire yesterday. The fire is 25% contained at 1500 acres. Yesterday fire fighters observed torching in groups of trees, short crown runs, creeping and burning in heavy fuels. A total of 97 people are engaged in fighting the fire which is burning 16 miles northeast of Challis. Officials are concerned about the fire spotting in heavy continuous fuels with beetle-killed trees. The fire area closure remains in effect.

#### **Clear Sage**

The Clear Sage fires remained at 461 acres again Wednesday. The fire is southeast of the Sagebrush Lookout in the Clear Creek drainage in the Frank Church – River of No Return Wilderness. The fire area closure remains in effect.

#### **Bohannon**

The 42 acre Bohannon Fire continues to smolder in a steep narrow drainage north of Bohannon Creek 10 miles southeast of Salmon.

### **FIRE UPDATE**

July 26, 2007

Contact: Kent Fuellenbach (208)756-5145, e-mail [kfuellenbach@fs.fed.us](mailto:kfuellenbach@fs.fed.us)

**No New fires were reported. Stage I Fire Restrictions remain in place for the Salmon-Challis National Forest.**

#### **Van Horn**

The Van Horn Fire burned an additional 150 acres yesterday bringing the total to 1,650 acres. New resources are arriving on the fire today and tomorrow that will bring the total to nine 20-person crews. The total number of fire fighters, including overhead, will be 212. Other resources include four engines and two dozers. The fire, burning in the Morgan Creek drainage 15 miles north east of Challis, is 45% contained. The spread of the fire could increase today because of predicted thunder storms with gusty winds.

Some local citizens have expressed concerns that the Van Horn Fire could have been controlled if the Forest Service had taken action sooner. The fire was reported to Central Idaho Fire Center at 1336 (1:36 p.m.) on Sunday, July 15. Within ten minutes, the following resources were in route to the fire; one helicopter with two rappellers, a second helicopter rigged for bucket drops, three engines and a five person hand crew.

The Fire Center has dispatched resources to 72 fires this season. Despite extremely hot and dry weather conditions, initial attack resources have kept 62 of those starts to fires less than one acre. Two fires are wildland use fires in the Frank Church-River of No Return Wilderness that have covered between 10 and 25 acres each. Three of the fires were controlled at less than 20 acres, and two reached 200 to 300 acres. Two fires, being managed using a confine/contain strategy, have covered 42 acres (Bohannon) and 461 acres (Clear Sage). The Van Horn Fire is the only fire that has burned more than 1,500 acres this summer.

#### **Clear Sage**

No change in acreage – 461. The fire area closure remains in effect.

#### **Bohannon**

No change in acreage - 42 acres.

### **FIRE UPDATE**

July 27, 2007

Contact: Kent Fuellenbach (208)756-5145, e-mail [kfuellenbach@fs.fed.us](mailto:kfuellenbach@fs.fed.us)

**No New fires were reported. Stage I Fire Restrictions remain in place for the Salmon-Challis National Forest.**

**Van Horn**

With the arrival of additional crews and specialized equipment fire fighters are making progress on the Van Horn fire today. A Temco felling machine began clearing a line to the ridge between Alder Creek and Van Horn Creek. Two Type I hotshot crews and two Type II crews have joined the effort since Wednesday bringing the total number of personnel to 181. Other resources include four engines and two dozers.

The 1650 acre fire, burning in the Morgan Creek drainage 15 miles north east of Challis, is 50% contained. The fire received .2 of an inch of rain yesterday. Today crews will continue working on the east flank of the fire and preparing a line from Van Horn Creek north to Alder Creek for possible burnout if conditions are favorable.

The fire area closure remains in effect.

**Clear Sage**

No change in acreage – 461. The fire area closure remains in effect.

**Bohannon**

No change in acreage - 42 acres.

**FIRE UPDATE**

July 28, 2007

Contact: Kent Fuellenbach (208)756-5145, e-mail kfuellenbach@fs.fed.us

**New Fire**

Some lightning was observed yesterday afternoon and one new fire was reported as a result. The Grizzly Fire is near the Idaho/Montana border about 11 miles northwest of North Fork. Two rappellers had the fire contained at one tenth acre by evening. They should be demobilized this afternoon.

**Van Horn**

Progress continued on the Van Horn Fire with 65% containment reached yesterday. Fire fighters will continue preparing and moping up along the line from Van Horn Creek north to Alder Creek for possible burnout if conditions are favorable. A Temco felling machine is being used to help clear the contingency line for the burnout. Crews also continue mop up of the line on the northeast of the fire. Crews made good progress on the east flank, but fuels continue to dry out and fire behavior picked up yesterday afternoon.

The 1650 acre fire is burning in the Morgan Creek drainage 15 miles north east of Challis.

The Van Horn Fire area closure remains in effect.

**Clear Sage**

The Clear Sage Fire showed some activity and growth yesterday. The fire is east of the Sagebrush Lookout in the Clear Creek drainage in the Frank Church – River of No Return Wilderness. The fire is in the area burned by the Clear Creek Fire in 2000 and is being managed using confine and contain strategy because of the steep rugged terrain and because the area was heavily burned during the 2000 Clear Creek Fire. The Clear Sage Fire area closure remains in effect.

**Bohannon**

No change in acreage - 42 acres.

**Stage I Fire Restrictions remain in place for the Salmon-Challis National Forest.**

**FIRE UPDATE**

July 30, 2007

Contact: Kent Fuellenbach (208)756-5145, e-mail kfuellenbach@fs.fed.us

**Where is the smoke coming from?**

The smoke that moved into Lemhi Valley yesterday and again today is coming from increased activity on large fires burning west of the Salmon-Challis National Forest. These fires and the

increase in acreage burned include: the Cascade Complex (+7,448 acres) and the Middle Fork Complex (+1,715 acres) on the Boise N.F.; The East Zone Complex (+2,365 acres) and the Raines Fire (+2,200 acres) on the Payette N.F.; and the Rattlesnake Fire (+100 acres) on the Nez Perce N.F.

#### **New Fire**

Lightning caused a spot fire 9 miles south of Moyer on the Salmon Cobalt Ranger District today. Two rappellers are doing initial attack. The West Fork Fire in the Moose Creek drainage, two miles south of Lost Trail Pass, has been controlled. Two firefighters rappelled to the fire, about two miles southwest of Lost Trail Pass yesterday. Helicopter 402 and a Heli-tanker 765 responded.

#### **Van Horn**

Crews continued to make good progress on the Van Horn Fire with containment estimated for August 4. Crews are mopping up the interior and securing the lines on each flank. The 1650 acre fire is burning in the Morgan Creek drainage 15 miles north east of Challis. The Van Horn Fire area closure remains in effect.

#### **Clear Sage**

Two of the four fires being called the Clear Sage Fire showed 22 acres over the past two days making a total of 483 acres for the fires. The fires are east of the Sagebrush Lookout in the Clear Creek drainage in the Frank Church – River of No Return Wilderness.. The Clear Sage Fire area closure remains in effect.

#### **Bohannon**

No change in acreage - 42 acres. The fire is 95% contained.

#### **Stage I Fire Restrictions remain in place for the Salmon-Challis National Forest.**

#### **High Fire Danger Prompts Stage 1 Fire Restrictions for Central Idaho**

**Salmon, Idaho, July 13, ---** Beginning Thursday, 12:01 a.m. July 19, Stage 1 Fire Restrictions will be in effect on the Salmon-Challis National Forest due to the continued hot dry weather conditions throughout central Idaho, increased fire activity, a sharp increase in the number of unattended and abandoned campfires and a weather forecast that promises no relief. The restrictions do not apply to the Frank Church – River of No Return Wilderness. The purpose of these restrictions is to provide for public safety and resource protection during times of high fire danger. The restrictions apply to campfires and outdoor smoking.

**Campfires and the use of charcoal briquettes** will only be allowed in designated recreation sites or campgrounds and only in metal fire rings or metal grills provided at the site. Fires in rock fire rings are not permitted. All Designated Campfire Areas will be posted at the site.

In addition to the campfire restrictions, **smoking is permitted** only inside buildings, vehicles, developed recreation sites, or within three foot diameter areas cleared of burnable vegetation.

#### **High Fire Danger Prompts Stage 1 Fire Restrictions for Three Idaho Wildernesses**

**Salmon, Idaho, July 18, ---** Beginning Thursday, 12:01 a.m. July 19, Stage 1 Fire Restrictions will be in effect through out the Frank Church – River of No Return, Gospel-Hump, and Selway-Bitterroot Wildernesses. The restrictions are due to the continued hot dry weather conditions throughout central Idaho, increased fire activity, and a weather forecast that promises no relief. The purpose of these restrictions is to provide for public safety and resource protection during times of high fire danger. The restrictions apply to campfires and outdoor smoking.

**Campfires are prohibited** except within a designated recreation site. Camp stoves using liquid petroleum or LPG fuels are allowed. Campers may use charcoal fires in approved fire pans at designated sites in the river corridors and fires are permitted within fully enclosed wood burning stoves equipped with a spark-arresting screen of ¼ inch mesh hardware cloth.

**Smoking is prohibited** except within a designated recreation site or while stopped in an area at least three feet in diameter that is barren or cleared of all flammable materials.



**Documentation of PM<sub>2.5</sub> Exceedances Due to a Natural  
Wildland Fire Events During the Summer of 2007  
Salmon, Idaho**

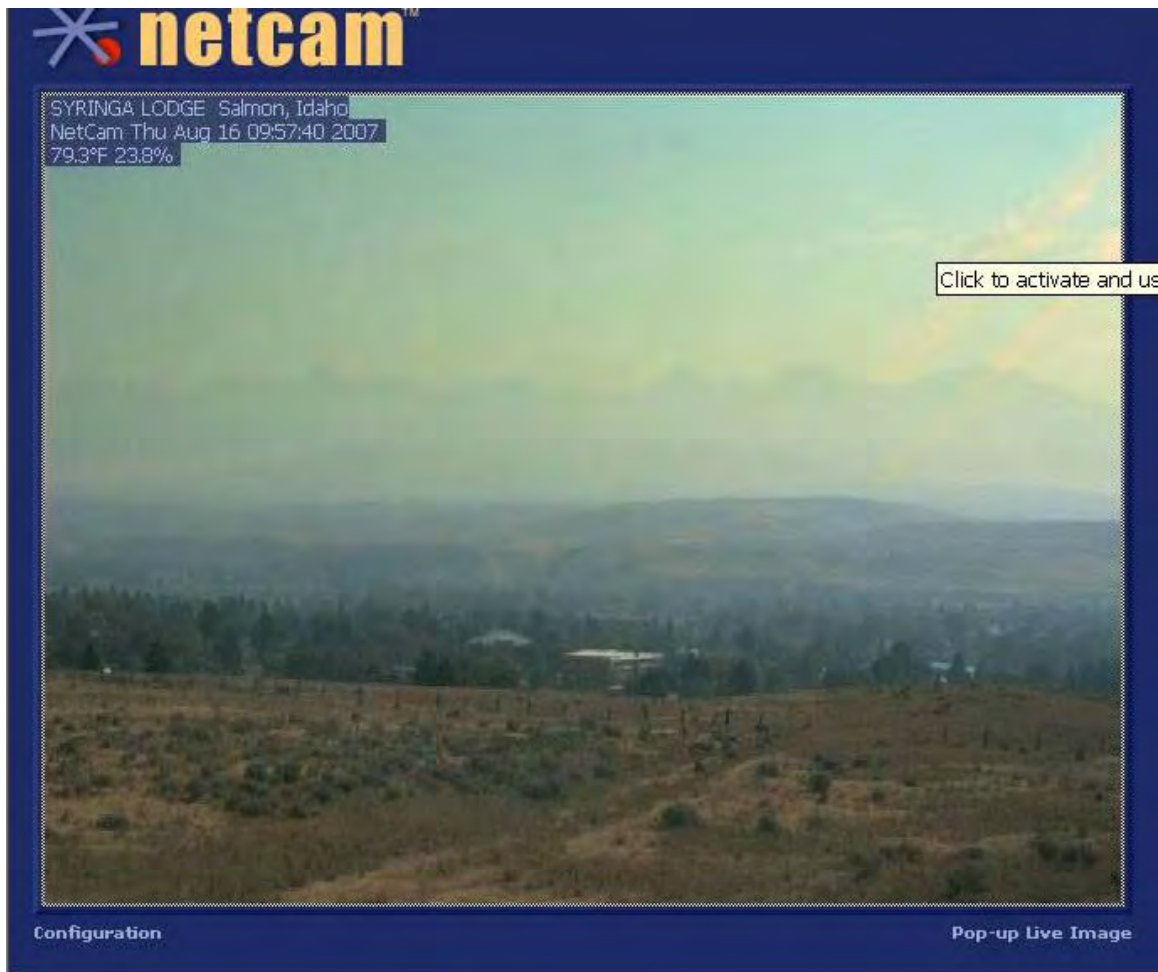
**Appendix D**

**Photographs and Webcam Stills**

DRAFT



Syringa Lodge, Salmon, ID NetCam Tuesday, August 14, 2007 at 12:05 p.m.



Syringa Lodge, Salmon, ID NetCam Tuesday, August 14, 2007 at 12:05 p.m.



Dan Hyde / for the Post Register (August 16, 2007)

*Smoke from regional wildfires has been settling in the river valley, making Salmon a tough place to catch a breath.*





Dan Hyde / for the Post Register (August 16, 2007)

*A Salmon backyard is bathed in a reddish orange glow Tuesday evening. The air quality was so bad Wednesday that extensive exercise or work outside was not recommended.*



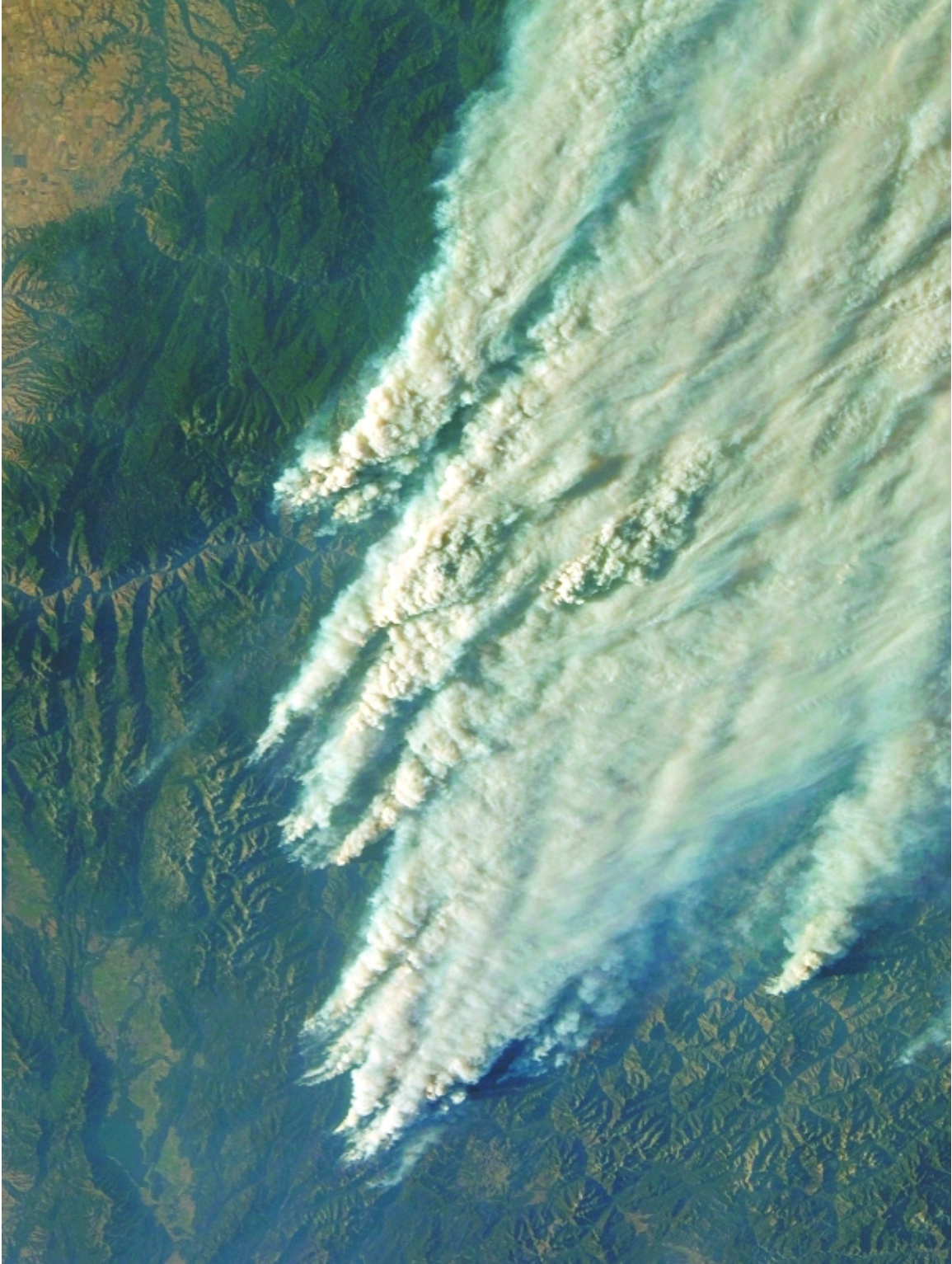


Photo courtesy of NASA / Post Register (August 17, 2007)

*The crew aboard the international space station took this image of the widespread forest fires in the Payette National Forest in Central Idaho within the Salmon River Mountains.*